IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A shunt/mechanical connector disposable to directly contact two discrete electrical components mountable together via a grid array comprising a plurality of electrically conductive grid array connectors, the connector to provide mechanical support and to provide a shunt electrical conduction path for predetermined electrical current between the electrical components such that the predetermined electrical current does not pass through grid array connectors of the grid array, at least part of said shunt/mechanical connector to extend within one of said electrical components so as to provide the shunt electrical conduction path.

2. (Original) A shunt/mechanical connector as claimed in Claim 1, where the shunt electrical conduction path has a cross-sectional area greater than that of any one of the grid array connectors, so as to provide a lower resistance shunt path for current than the grid array connectors.

3. (Previously Presented) A shunt/mechanical connector as claimed in Claim 1, where the shunt/mechanical connector has at least one contact to electrically contact at least one of a pad, a via, and predefined conductive patterns electrically connected to a power or ground plane of at least one of the electrical components.

4. (Original) A shunt/mechanical connector as claimed in Claim 1, where the shunt/mechanical connector is providable in a location in at least one of: a predetermined reserved component area of the grid array arrangements; within a grid array connector area having the plurality of grid array connectors; outside of the grid array connector area, but through any socket assembly providing the plurality of grid array connectors; and, outside of any socket assembly.

5. (Original) A shunt/mechanical connector as claimed in Claim 1, where the shunt/mechanical connector is substantially made of at least one of rigid electrically conductive sections formed as one of a molded, stamped, etched, extruded and deposited arrangement, and is capable of withstanding temperatures of at least a normal electrical component operation of the electrical components.

6. (Previously Presented) A shunt/mechanical connector as claimed in Claim 1, the shunt/mechanical connector being one of provided separately from, and integrated with one of, the electrical components.

7. (Original) A shunt/mechanical connector as claimed in Claim 1, where one of the electrical components is one of: a motherboard, a printed circuit board (PCB); and a receiving substrate, and another of the electrical components is one of: a semiconductor package; a semiconductor package having an interposer; and an interfacing substrate.

8. (Previously Presented) A shunt/mechanical connector as claimed in Claim 1, comprising a grid array mount being one of: a bump/ball grid array (BGA); a micro BGA (μBGA); a pin grid array; and a micro pin grid array.

9. (Currently Amended) A mounted electrical components arrangement comprising:

a plurality of discrete electrical components mounted together by a grid array comprising a plurality of electrically conductive grid array connectors, wherein the grid array [[that]] contacts a first one of the discrete electrical components and a second one of the discrete electrical components; and

a shunt/mechanical connector disposed to directly contact the first one of the electrical components and to directly contact the second one of the electrical components, the connector to provide mechanical support and to provide a shunt electrical conduction path for predetermined electrical current such that the predetermined electrical current between the first and second electrical components does not pass through grid array connectors of the grid array.

10. (Original) A mounted electrical components arrangement as claimed in Claim 9, where the shunt electrical conduction path has a cross-sectional area greater than that of any one of the grid array connectors, so as to provide a lower resistance shunt path for current than the grid array connectors.

11. (Previously Presented) A mounted electrical components arrangement as claimed in Claim 9, where the shunt/mechanical connector has at least one contact in electrical contact with at least one of a pad, a via, and predefined conductive patterns electrically connected to a power or ground plane of at least one of the electrical components.

12. (Previously Presented) A mounted electrical components arrangement as claimed in Claim 9, where the shunt/mechanical connector is provided in a location in at least one of: a predetermined reserved component area of the grid array arrangements; within a grid array connector area having the plurality of grid array connectors; outside of the grid array connector area, but through any socket assembly providing the plurality of grid array connectors; and, outside of any socket assembly.

13. (Original) A mounted electrical components arrangement as claimed in Claim 9, where the shunt/mechanical connector is substantially made of at least one of rigid electrically conductive sections formed as one of a molded, stamped, etched, extruded and deposited arrangement, and is capable of withstanding temperatures of at least a normal electrical component operation of the electrical components.

14. (Original) A mounted electrical components arrangement as claimed in Claim 9, the shunt/mechanical connector being one of provided separately from, and integrated with one of, the electrical components.

15. (Original) A mounted electrical components arrangement as claimed in Claim 9, where one of the electrical components is one of: a motherboard, a printed circuit board (PCB); and a receiving substrate, and another of the electrical components is one of: a semiconductor package; a semiconductor package having an interposer; and an interfacing substrate.

16. (Previously Presented) A mounted electrical components arrangement as claimed in Claim 9, where the grid array mount being one of: a bump/ball grid array (BGA); a micro BGA (μBGA); a pin grid array; and a micro pin grid array.

17. (Previously Presented) A shunt/support device comprising a shunt/support member disposable to directly contact a first discrete electrical component and a second discrete electrical component, said first and second discrete electrical components being mountable together with opposing grid array arrangements having a plurality of grid array connectors, the shunt/support member engageable with the first and second electrical components to at least one of mechanically support and secure the electrical components with respect to each other, and also to provide at least one electrical conduction path electrically connectable so as to shunt more than a majority portion of at least one predetermined type of current flowable between the first and second electrical components, from flowing through ones of the plurality of grid array connectors, at least part of said shunt/support member to extend within one of said first and second electrical components so as to provide the at least one electrical conduction path.

18. (Original) A shunt/support device as claimed in Claim 17, the shunt/support member being at least one shunt/support post disposable between the electrical components.

19. (Original) A shunt/support device as claimed in Claim 17, the shunt/support member disposable to shunt substantially all of the at least one predetermined type of current.

20. (Original) A shunt/support device as claimed in Claim 17, the shunt/support member being capable to shunt the more than a majority portion of the at least one predetermined type of current, by the at least one electrical conduction path having a lower electrical resistance for current flowable between the electrical components through the shunt/support device, in comparison to an electrical resistance through the ones of the plurality of grid array connectors.

21. (Original) A shunt/support device as claimed in Claim 20, with the at least one electrical conduction path having the lower electrical resistance by at least one of: having a current-carrying cross-sectional area measured perpendicularly across an electrical current flow direction therethrough which is greater than a corresponding cross-sectional area of the ones of the plurality of grid array connectors; and being constructed of material which is lower in electrical resistance than an electrical resistance of a material of the ones of the plurality of grid array connectors.

22. (Original) A shunt/support device as claimed in Claim 17, the at least one predetermined type of current being one of a power supply current, a grounding current, and a high-voltage current.

23. (Original) A shunt/support device as claimed in Claim 17, the shunt/support member being securable with the electrical components using at least one of solder, welding, at least one fastener, and glue, so as to mechanically secure the electrical components with respect to each other.

24. (Previously Presented) A shunt/support device as claimed in Claim 17, the shunt/support member being disposable in a location in at least one of: a predetermined reserved component area of the grid array arrangements; within a grid array connector area having the plurality of grid array connectors; outside of the grid array connector area, but through any socket assembly providing the plurality of grid array connectors; and, outside of any socket assembly.

25. (Original) A shunt/support device as claimed in Claim 17, where one of the electrical components is one of: a motherboard, a printed circuit board (PCB); and a receiving substrate, and another of the electrical components is one of: a semiconductor package; a semiconductor package having an interposer; and an interfacing substrate.

26. (Original) A shunt/support device as claimed in Claim 17, the grid array arrangements being one of: a bump/ball grid array (BGA); a micro BGA (μBGA); a pin grid array; and a micro pin grid array.

27. (Original) A shunt/support device as claimed in Claim 17, where the shunt/support member comprises aligner components to substantially align the opposing conductive grid-array patterns of the electrical components during mounting together thereof.

28. (Previously Presented) A system comprising:

electrical components mounted together with opposing grid array arrangements having a plurality of grid array connectors; and

a shunt/support device including a shunt/support member disposed between and engaged with the electrical components to at least one of mechanically support and secure the electrical components with respect to each other, and further including at least one electrical conduction path electrically connected so as to shunt more than a majority portion of at least one predetermined type of current flowable between the electrical components from flowing through ones of the plurality of grid array connectors, at least part of said shunt/support member to extend within one of said electrical components so as to provide the at least one electrical conduction path.

29. (Original) A system as claimed in Claim 28, the shunt/support member being at least one shunt/support post disposable between the electrical components.

30. (Original) A system as claimed in Claim 28, the shunt/support member disposable to shunt substantially all of the at least one predetermined type of current.

31. (Original) A system as claimed in Claim 28, the shunt/support member being capable to shunt the more than a majority portion of the at least one predetermined type of current by the at least one electrical conduction path having a lower electrical resistance for current flowable between the electrical components through the shunt/support device, in comparison to an electrical resistance through the ones of the plurality of grid array connectors.

32. (Original) A system as claimed in Claim 28, with the at least one electrical conduction path having the lower electrical resistance by at least one of: having a current-carrying cross-sectional area measured perpendicularly across an electrical current flow direction therethrough which is greater than a corresponding cross-sectional area of the ones of the plurality of grid array connectors; and being constructed of material which is lower in electrical resistance than an electrical resistance of a material of the ones of the plurality of grid array connectors.

33. (Original) A system as claimed in Claim 28, the at least one predetermined type of current being one of a power supply current, a grounding current, and a high-voltage current.

34. (Previously Presented) A system as claimed in Claim 28, the shunt/support member being securable with the electrical components using at least one of solder, welding, at least one fastener, and glue, so as to mechanically secure the electrical components with respect to each other.

35. (Original) A system as claimed in Claim 28, the shunt/support device being disposable in a location in at least one of: a predetermined reserved component area of the grid array arrangements; within a grid array connector area having the plurality of grid array connectors; outside of the grid array connector area, but through any socket assembly providing the plurality of grid array connectors; and, outside of any socket assembly.

36. (Original) A system as claimed in Claim 28, where one of the electrical components is one of: a motherboard, a printed circuit board (PCB); and a receiving substrate, and another of the electrical components is one of: a semiconductor package; a semiconductor package having an interposer; and an interfacing substrate.

37. (Original) A system as claimed in Claim 28, the grid array arrangements being one of: a bump/ball grid array (BGA); a micro BGA (μBGA); a pin grid array; and a micro pin grid array.

38. (Original) A system as claimed in Claim 28, where the shunt/support member comprises aligner components to substantially align the opposing conductive grid-array patterns of the electrical components during mounting together thereof.

39. (Previously Presented) A shunt/mechanical connector as claimed in claim 1, wherein the shunt/mechanical connector is disposable at least partially sandwiched between the electrical components.

40. (Previously Presented) A mounted electrical components arrangement as claimed in Claim 9, wherein the shunt/mechanical connector is disposable at least partially sandwiched between the electrical components.

41. (Previously Presented) A shunt/support device as claimed in Claim 17, where the shunt/support member is disposable at least partially sandwiched between the electrical components.

42. (Previously Presented) A system as claimed in Claim 28, where the shunt/support member is disposable at least partially sandwiched between the electrical components.

43. (Previously Presented) An apparatus comprising:

a semiconductor package including a die and a plurality of connectors electrically coupled to the die, wherein the plurality of connectors are formed in an array on a surface of the semiconductor package, and wherein the surface comprises a first plurality of conductive patterns;

a receiving substrate including a mounting assembly to receive the plurality of connectors, wherein the receiving substrate comprises a second plurality of conductive patterns; and

a plurality of shunts electrically and physically coupled between corresponding ones of the first and second plurality of conductive patterns, wherein individual ones of the plurality of shunts have a cross-sectional area and a current-carrying capacity greater than that of any one of the plurality of connectors.

44. (Currently Amended) The apparatus as claimed in claim 43 [[1]], wherein the array includes a reserved component area, and wherein the plurality of shunts are within the reserved component area.

45. (Currently Amended) The apparatus as claimed in claim 43 [[1]], wherein the array includes a reserved component area, and wherein at least one of the plurality of shunts is within the reserved component area.

46. (Currently Amended) The apparatus as claimed in claim 43 [[1]], wherein the array includes a reserved component area, and wherein none of the plurality of shunts are within the reserved component area.

47. (Currently Amended) The apparatus as claimed in claim 43 [[1]], wherein the shunts are to conduct power and ground current from the second plurality of conductive patterns on the receiving substrate to the first plurality of conductive patterns on the semiconductor package.

48. (Currently Amended) The apparatus as claimed in claim 43 [[1]], wherein at least one of the plurality of shunts is hollow.

49. (Currently Amended) The apparatus as claimed in claim 43 [[1]], wherein at least one of the plurality of shunts has a frame-like structure with an open center portion.

50. (Currently Amended) The apparatus as claimed in claim 43 [[1]], wherein at least one of the plurality of shunts has a frame-like structure with an open center portion to accommodate components to be mounted therein.

51. (Currently Amended) The apparatus as claimed in claim 43 [[1]], wherein at least one of the plurality of shunts includes an extension on one end, and wherein one of the semiconductor package and the receiving substrate has at least one corresponding hole to receive the extension.

52. (Currently Amended) The apparatus as claimed in claim 43 [[1]], wherein at least one of the plurality of shunts includes an extension on each end, and wherein the semiconductor package and the receiving substrate have at least one corresponding hole to receive the respective extension.

53. (Currently Amended) The apparatus as claimed in claim 43 [[1]], wherein at least one of the plurality of shunts includes at least one conductive portion separated by at least one insulating portion.

54. (Currently Amended) The apparatus as claimed in claim 43 [[1]], wherein at least one of the plurality of shunts extends completely through the semiconductor package.

55. (Currently Amended) The apparatus as claimed in claim 43 [[1]], wherein at least one of the plurality of shunts extends completely through the semiconductor package and the receiving substrate to fasten the semiconductor package to the receiving substrate.

56. (Currently Amended) The apparatus as claimed in claim 43 [[1]], wherein at least one of the plurality of shunts is circular in cross-section.

57. (Currently Amended) The apparatus as claimed in claim 43 [[1]], wherein at least one of the plurality of shunts is rectangular in cross-section.

58. (Currently Amended) The apparatus as claimed in claim 43 [[1]], wherein the plurality of connectors comprises pins, and wherein the mounting assembly comprises sockets.